An Axis company

2N® IP Base

Door Entry IP Intercom



Installation Manual

Version: 2.10

www.2n.cz

The 2N TELEKOMUNIKACE a.s. is a Czech manufacturer and supplier of telecommunications equipment.



The product family developed by 2N TELEKOMUNIKACE a.s. includes GSM gateways, private branch exchanges (PBX), and door and lift communicators. 2N TELEKOMUNIKACE a.s. has been ranked among the Czech top companies for years and represented a symbol of stability and prosperity on the telecommunications market for almost two decades. At present, we export our products into over 120 countries worldwide and have exclusive distributors on all continents.

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2N TELEKOMUNIKACE a.s. administers the FAQ database to help you quickly find information and to answer your questions about 2N products and services. On www.faq.2n.cz you can find information regarding products adjustment and instructions for optimum use and procedures „What to do if...".

2N TELEKOMUNIKACE a.s. hereby declares that the 2N® product complies with all basic requirements and other relevant provisions of the 1999/5/EC directive. For the full wording of the Declaration of Conformity see the CD-ROM (if enclosed) or our website at www.2n.cz.

The 2N TELEKOMUNIKACE a.s. is the holder of the ISO 9001:2009 certificate. All development, production and distribution processes of the company are managed by this standard and guarantee a high quality, technical level and professional aspect of all our products.

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1. Product Overview

Here is what you can find in this section:

- 1.1 Components and Associated Products
- 1.2 Terms and Symbols

Basic Features

2N® IP Base – is an elegant and reliable intercom equipped with lots of useful functions. Thanks to SIP support and compatibility with major brands of PBX manufacturers, it can benefit from using VoIP networks. **2N® IP Base** can be used as a door or special purpose intercom for office buildings, residential areas and other applications.

Wide angle HD camera – allows the tenant to see the calling person on his or her videophone or PC screen in high resolution.

Quick dial buttons – there are 2 quick dial buttons in total. For each button, up to three separate phone numbers plus substitute users can be defined, which ensures that the called user is reached whenever needed. The buttons are backlit with a clear mechanical response. The nametag surface is scratch resistant.

RFID card reader – the card reader module brings the access control functionality according to the RFID card or keyfob. With the advanced features, other functions can be RFID card controlled too.

Electric lock control – as part of the access system, the electrical lock can be controlled by a code entered on the keypad or the called phone, with the RFID card, via a PC application, etc. Numerous parameters allow for a wide spectrum of applications.

Robustness – **2N® IP Base** is designed as a vandal resistant intercom, which withstands mechanical or weather conditions with no need to purchase extra accessories.

Audio quality – using the automatic echo cancelling system, full duplex communication is available at any time.

The installation of 2N® IP Base – is very easy, all you have to do to attach the network cable. The intercom can be supplied from a 12 V DC power source, or using a PoE switch.

Use your PC with any internet browser to configure **2N® IP Base** or apply the **2N® Access Commander** to configure extensive installations of multiple intercoms.

Advantages of Use

- Elegant design

- Weather resistant
- Sensitive microphone and loud speaker
- Both-way audio communication – acoustic echo cancellation
- Integrated colour HD camera with wide-angle lense and hidden night vision
- Selectable number of quick dial buttons (one or two) with name tags and backlight
- Integrated switches of electric locks with wide setting options
- Optional integrated RFID card reader module
- PoE or 12 V DC power supply
- Configuration using web interface or dedicated PC application
- VoIP standard SIP 2.0 support
- 1999 Phone Book positions
- 20 user time profiles
- Video codecs (H.263, H.263+, H.264, MJPEG)
- Audio codecs (G.711, G.722)
- NTP client for time synchronisation

1.1 Components and Associated Products

Main Units

Part No. 9156111CB 	• Main unit 2N® IP Base • Standalone compact unit is expandable with an RFID reader. • We recommend to use the mounting backplate on an uneven surface, or installation to installation box. • The main unit has to be placed in a shady area.

Caution

The only possible installation of 2N® P Base is on surface.

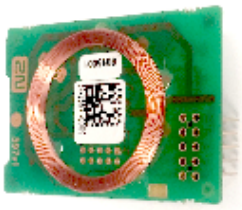
Mounting backplate

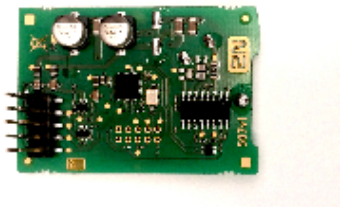
Part No. 9156020 	• 2N® IP Base – mounting backplate • Mounting backplate for main unit 2N® IP Base • Optional, recommended for mounting on uneven surfaces (inequalities bigger than 2mm)

2N® IP Base is designed for outdoor use and requires no additional roof.

Expansion modules

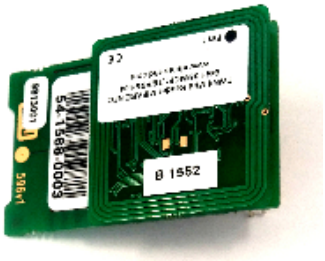
Part No. 9156030

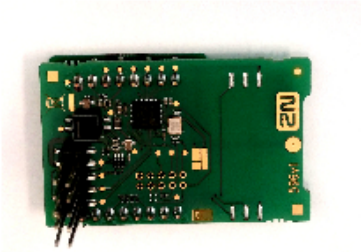




- **2N® IP Base** – RFID Card Reader, 125 kHz
- The card reader module provides you with access control via contactless cards or keyfobs. The module supports the 125 kHz EM-41xx or HID Proximity cards.

Part No. 9156031





- **2N® IP Base** – RFID Card Reader, 13.56 MHz
- The card reader module provides you with access control via contactless cards or keyfobs. The module supports the following 13.56 MHz cards or other carriers (only card serial number is read):
- **ISO/IEC 14443A** Mifare Classic 1k & 4k, DESFire EV1, Mini, Plus S&X, Ultralight, Ultralight C
- **ISO/IEC 14443B** CEPAS, HID iCLASS – CSN only
- **JIS X 6319** Felica

Internal Units

Part Numbers: 91378365 91378366 	• 2N® Indoor Touch – black • WiFi version (second part no.) • The elegant internal touch panel, 2N® Indoor Touch, is suitable for all 2N IP intercoms. On the panel's display not only can you find out who is at the door, but also start a conversation with the visitor, open the lock or turn on the light in the entrance hall.
Part Numbers: 91378365WH 91378366WH 	• 2N® Indoor Touch – white • WiFi version (second part no.) • The elegant internal touch panel 2N® Indoor Touch is suitable for all 2N IP intercoms. On the panel's display not only can you find out who is at the door, but also start a conversation with the visitor, open the lock or turn on the light in the entrance hall.

VoIP Phones

Part No. 91378358 	• Grandstream GXV3240 VoIP video telephone • GXV3240 is the successor to the popular GXV3140 model, which allows comfortable video calls in the IP network. Touchscreen and keyboard control.
Part No. 91378357 	• Grandstream GXV3275 VoIP telephone • GXV3275 is the successor to the popular GXV3175 model, which allows comfortable video calls in the IP network. Touchscreen control.

Electric Locks

Part No. 932071E 	• BEFO 11211 • 12 V / 230 mA DC • low consumption
Part No. 932081E 	• BEFO 11221 with momentum pin • 12 V / 230 mA DC • low consumption • For opening of the lock a short electrical impuls is sufficient, which unlocks the lock. Lock is then open until someone closes the door.
Part No. 932091E 	• BEFO 11211MB with mechanical blocking • 12 V / 230 mA DC • low consumption • Enables mechanically close or open the lock. When opened, the lock is open all the time. When closed, it behaves as standart electrical lock.

Part No. 932061E 	• 211211 door signalling, low consumption • 12 V / 230 mA • A regular lock with a built-in contact to indicate whether the door is open or closed.
Part No. 932072E 	• 31211 fail-safe • 12 V / 170 mA DC • The failsafe lock is closed when electricity is switched on. When electricity is interrupted, the lock is opened.
Part No. 932062E 	• 321211 fail-safe, door signalling • 12 V / 170 mA • The failsafe lock is closed when electricity is switched on. When electricity is interrupted, the lock is opened. • It contains a built-in contact to indicate whether the door is open or closed.

Tip

- FAQ: Electric locks – Difference between locks in 2N IP intercoms accesories

Power Supply

Part Numbers: 91378100 91378100E 91378100US 	• PoE injector – without cable • PoE injetor – with EU cable • PoE injector – with US cable • For power supply of intercom via ethernet cable when PoE switch is not available.
Part No. 91341481E 	• Stabilised 12 V / 2 A power supply needs to be used when no PoE is available.
Part No. 932928 	• For external power supply of the lock with 12 V AC voltage.

Two-wire connection

Part No. 9159014EU/US/UK



- 2N® 2Wire
- (set of 2 adaptors and power source for EU/US/UK)
- The 2N® 2Wire converter allows you to use existing wiring (2 wires) from your original door bell or door intercom to connect any IP device. You don't have to configure anything, and you only need one 2N® 2Wire unit at each end of the cable and a power source connected to at least one of these units. The 2N® 2Wire unit then provides PoE power not only to the second converter, but also to all other connected IP end devices.

RFID 13 MHz

Part No. 9137421E 	• Ext. RFID Reader 13.56 MHz, 125 kHz + NFC/HCE (USB interface) • External RFID card reader for connection to PC using a USB interface. Suitable for system administration and adding 13.56 MHz, 125 kHz cards and Android platforms devices supporting NFC/HCE using a web interface or the **2N® Access Commander** application. It reads the same types of cards and devices as card readers in **2N IP intercoms**.
Part No. 9134173 	• Mifare Classic 1k RFID card, 13.56 MHz
Part No. 9134174 	• Mifare Classic 1k RFID fob, 13.56 MHz

RFID 125 kHz

Part No. 9137420E 	• USB RFID card reader 125 kHz • External RFID card reader for connection to a PC using a USB interface. Suitable for system management and the addition of EM41xx cards via the PC application, **2N® Access Commander**.
Part No. 9134165E 	• RFID card, type EM4100, 125 kHz
Part No. 9134166E 	• RFID fob, type EM4100, 125 kHz

External switches

Part No. 9159010 	• 2N® Security Relay • A handy add-on that significantly enhances door entry security as it prevents tampering with the intercom and forced opening of the lock. To be installed between intercom and lock, powered by the intercom.
Part No. 9137410E 	• External IP Relay – 1 output • Standalone IP device which can be controlled by HTTP commands sent by **2N IP intercom**, which can thus control devices on unlimited distance.
Part No. 9137411E 	• External IP Relay – 4 outputs, PoE • Standalone IP device which can be controlled by HTTP commands sent by **2N IP intercom**, which can thus control devices on unlimited distance.

Sensors and switches

Part No. 9159013 	• Exit button • A button for connection to a logic input for opening a door inside a building.
Part No. 9159012 	• Magnetic door contact • Set for installation on a door, enabling the status of door opening to be ascertained. Used when the intercom is used for door protection, to detect when the door is not

Tip

- For more accessories and particular advice please contact your local distributor of 2N products.

1.2 Terms and Symbols

The following symbols and pictograms are used in the manual:

Safety

- Always abide by this information to prevent persons from injury.

Warning

- Always abide by this information to prevent damage to the device.

Caution

- Important information for system functionality.

Tip

- Useful information for quick and efficient functionality.

Note

- Routines or advice for efficient use of the device.

2. Description and Installation

Here is what you can find in this section:

- 2.1 Before You Start
- 2.2 Mechanical Installation
- 2.3 Electric Installation
- 2.4 Extending Module Connection
- 2.5 Completion

Product Completeness Check

Before you start please check whether the contents of the package of your new 2N® IP Base complies with the following list:

- 2N® IP Base
- Manual
- Films for labels
- Double-ended wrench – Torx
- Double-button
- Screws and dowels
- Metal pads





2.2 Mechanical Installation

Surface Mounting

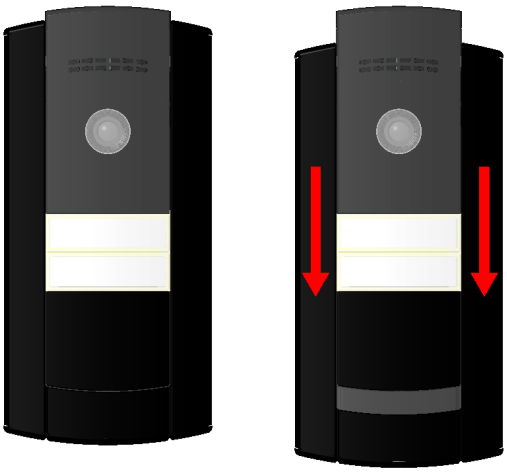
What you need for mounting:

- 2N® IP Base plus appropriate frames
- LAN connection, UTP Cat5e or better with RJ-45 connector
- 802.3af PoE or 12 V DC / 2 A power supply

Before using this product, please read the instruction manual and follow the instructions and recommendations contained therein.

Installation procedure:

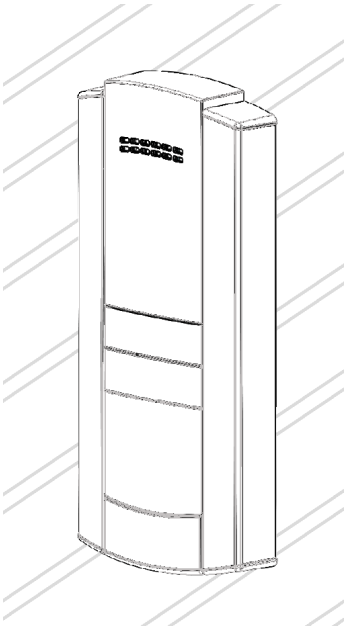
- Choose a location easily accessible to users.
- As the intercom is black, do not install it in direct sunlight to avoid overheating.
- Verify the cable connecting options – the device has two grommets towards the wall at the bottom.
- Prepare the cables connected to the LAN as well as the power supply and line to the lock or other accessories if necessary.
- Remove the metal frame of the device, open the lower blank module as pointed by the arrows and insert all the cables. Put the cables through the grommets. The manufacturer is not liable for defects caused by loss due to insufficient sealing.
- Fit the device to the backplate. You can use a drilling template; download here.
- Plug in the cables, check the functionality of the device.
- Replace the blank module and attach the frame.
- The figures below show frame demounting and position of the mounting screws.



Frame Demounting. First use the torx handle enclosed to remove the screw that fits the frame to the 2N® IP Base structure.



Position of Mounting Screws on 2N® IP Base



The device is intended for surface mounting, for this type of installation the device itself is sufficient. A mounting backplate can be used (**Part. No. 9156020**) for uneven surfaces and easier installation. For mounting backplate installation, follow the mounting backplate instructions.

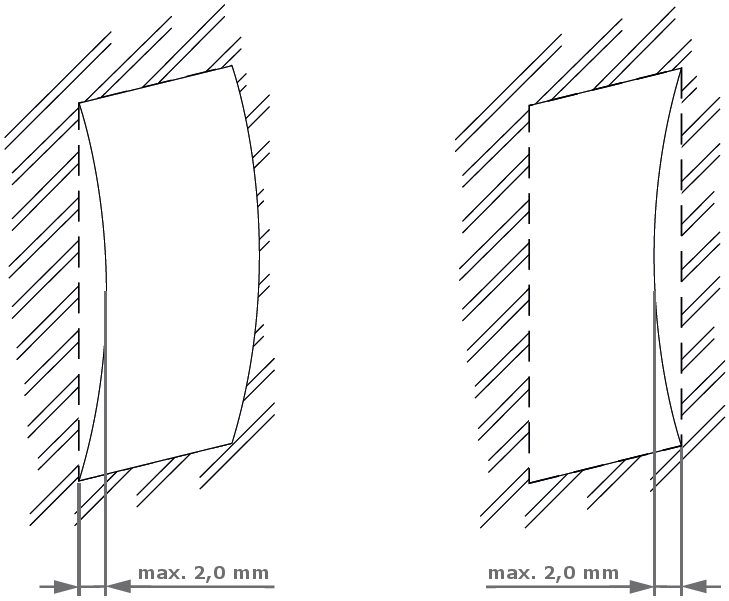
Caution

- After removing the front end cap at the lower part of the intercom make sure that there is no dirt on gaskets and connectors.
- The warranty does not apply to the product defects and failures arisen as a result of improper mounting (in contradiction herewith). The manufacturer is neither liable for damage caused by theft within an area that is accessible after the attached electric lock is switched. The product is not designed as a burglar protection device except when used in combination with a standard lock, which has the security function.
- When the proper mounting instructions are not met, water might get in and destroy the electronics. It is because the communicator circuits are under continuous voltage and water infiltration causes an electro-chemical reaction. The manufacturer's warranty shall be void for products damaged in this way!

Mounting Principles

Caution

- Make sure that the diameter of the dowel holes is accurate to avoid falling out of the dowels! Use the mounting glue to secure the dowels if necessary. Make sure that the depth of the dowel holes is accurate! Do not use low-quality dowels to avoid their pulling out of the wall!
- Never turn 2N® IP Base to align the box assembly after mounting. Make sure that the flush mounting boxes have been installed accurately.
- Make sure that the surface mounting place is perfectly flat with the maximum inequality of 2 mm (e.g. desk materials, glass, cut stone etc.). If the place is not flat, use mounting backplate Part No. 9156020 or equal the wall surface.


max. 2,0 mm
max. 2,0 mm

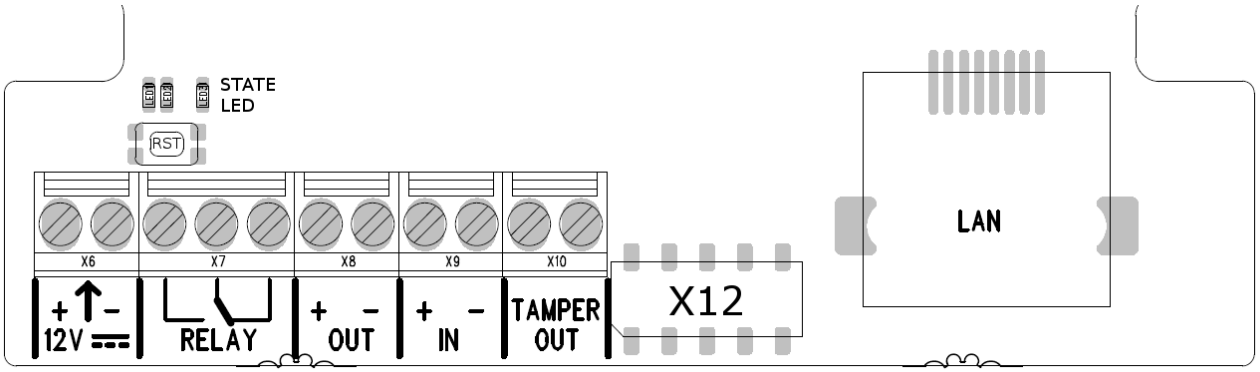
2.3 Electric Installation

This subsection describes how to connect the **2N® IP Base** main unit to the power supply and LAN and how to connect other elements. Connection of RFID reader modules is contained in section **2.4 Extending Module Connection**.

⚠ The device must be part of the electrical system of the building.

Main Unit Connector Configuration

Description board connectors accessible to users:

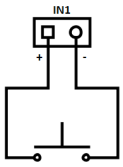


Legend	
LAN (PoE)	LAN (PoE according to 802.3af) connector
X12 Connector	The connector for RFID Reader modules
Tamper	Output of internal security intercom contact
IN	Terminals for input in passive / active mode (-30 V to +30 V DC) • OFF = open OR UIN > 1.5 V • ON = closed contact OR UIN < 1.5 V
OUT	OUT1 active output: 8 up to 12 V DC depending on power supply (PoE: 10 V; adaptor: power supply voltage minus 2 V), max 600 mA

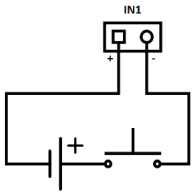
Legend	
RELAY	Terminal 30 V / 1 A AC/DC NO/NC contact
12V	External 12 V / 2 A DC power supply terminals
RESET (RST)	RESET / FACTORY RESET button
LED	LED indicators (red – device state / green – eth. link up / yellow – LAN activity)

Tip

- Wiring Diagram of IN1 connector in active mode



- Wiring Diagram of IN1 connector in passive mode



Electric Lock Connection

Connect the electric lock or another electric appliance directly to the device Active input or use a relay to switch the power supply. In the latter case, use an external lock supply. In any case, you are recommended to use low-consumption locks and keep the limits mentioned above.

Warning

When you connect a device containing a coil, such as a relay or an electromagnetic lock, it is necessary to protect the intercom against voltage peak while switching off the induction load. For this way of protection we recommend a diode 1 A / 1000 V (e.g., 1N4007, 1N5407, 1N5408) connected antiparallel to the device.



Main Unit

Power Supply Connection

2N® IP Base can be powered either from an external 12 V / 2 A DC source or directly from the LAN equipped with PoE 802.3af supporting network elements.

External power supply

Use a 12 V ±15 % SELV supply dimensioned to the minimum current consumption of 2 A (Part No. 91341481E) to make your system work reliably. This power supply provides 2N® IP Base with 24 W for feeding of the main unit.

PoE Power Supply

2N® IP Base is compatible with the PoE 802.3af (Class 0–12,95 W) technology and can be fed directly from the LAN via the compatible network elements. If your LAN does not support this technology, insert a PoE injector, Part No. 91378100, between 2N® IP Base and the nearest network element. This power supply provides 2N® IP Base with 12 W for feeding of the main unit.

Combined Power Supply

2N® IP Base can be fed from an external power supply and PoE at the same time.

LAN Connection

2N® IP Base is connected to the Local Area Network (LAN) via the UTP/STP cable (Cat 5e or higher) terminated with an RJ-45 (LAN) connector. As the device is equipped with the Auto-MDIX function, both the straight and crossed cable can be used.

Caution

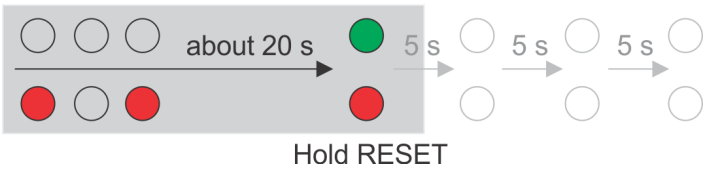
- We recommend the use of a LAN surge protection.
- We recommend the use of a shielded SSTP Ethernet cable.

Device Restart and Factory Reset

2N® IP Base is equipped with a RESET button. Press the button shortly (< 1 s) to restart the system without changing configuration.

Follow the instructions below to identify the current IP address:

- Press and hold the RESET button.
- Wait until the red and green LEDs on the device come on simultaneously (approx. 20 s).
- Release the RESET button.
- The device announces the current IP address via the loudspeaker connected automatically.



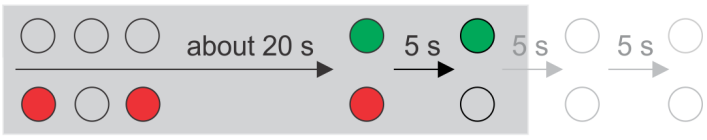
Follow the instructions below to switch on the Static IP address mode (DHCP OFF):

- Press and hold the REST button.
- Wait until the red and green LEDs on the device come on simultaneously (approx. 20 s).

- Wait until the red LED goes off (approx. 5 s).
- Release the RESET button.

The following network parameters will be set after restart:

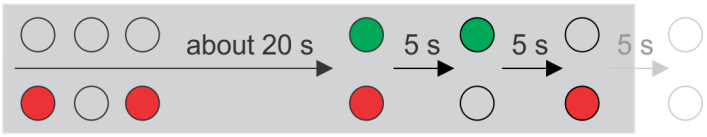
- IP address: 192.168.1.100
- Network mask: 255.255.255.0
- Default gateway: 192.168.1.1



Hold RESET

Follow the instructions below to switch on the **Dynamic IP address** mode (DCHP ON):

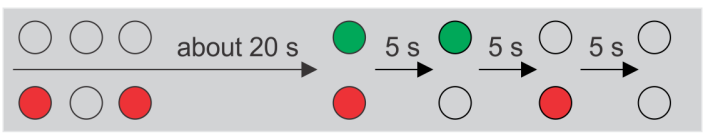
- Press the RESET button.
- Wait until the red and green LEDs on the device come on simultaneously (approx. 20 s).
- Wait until the red LED goes off (approx. 5 s).
- Wait until the green LED goes off and the red LED comes on again (another 5 s).
- Release the RESET button.



Hold RESET

Follow the instructions below to **reset the factory default values**:

- Press the RESET button.
- Wait until the red and green LEDs on the device come on simultaneously (approx. 20 s).
- Wait until the red LED goes off (approx. 5 s).
- Wait until the green LED goes off and the red LED comes on again (approx. 5 s).
- Wait until the red LED goes off (another 5 s).
- Release the RESET button.



Hold RESET

Caution

- In case of resetting the factory default settings on a device with a version of firmware 2.18 or higher it is necessary to reprogram the 2N® Security Relay using the instructions from section 2.4.

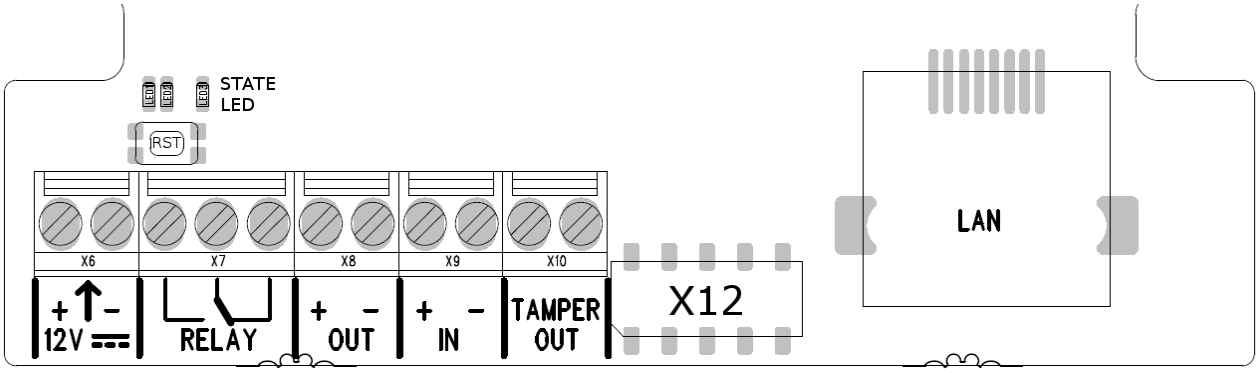
2.4 Extending Module Connection

2N® IP Base allows to connect following extending modules:

- RFID card reader 125 kHz
- RFID card reader 13.56 MHz
- Security Relay

Module Bus Interconnection

All modules 2N® IP Base, are connected via connector X12, the position of this connector is shown in Fig. Before connecting RFID card reader it is suitable to disconnect 2N® IP Base from the power supply. Only one module can be connected at a time.



How to install modules:

1) On the picture there is a highlighted connector X12. This connector is designed to connect the module to the main unit.

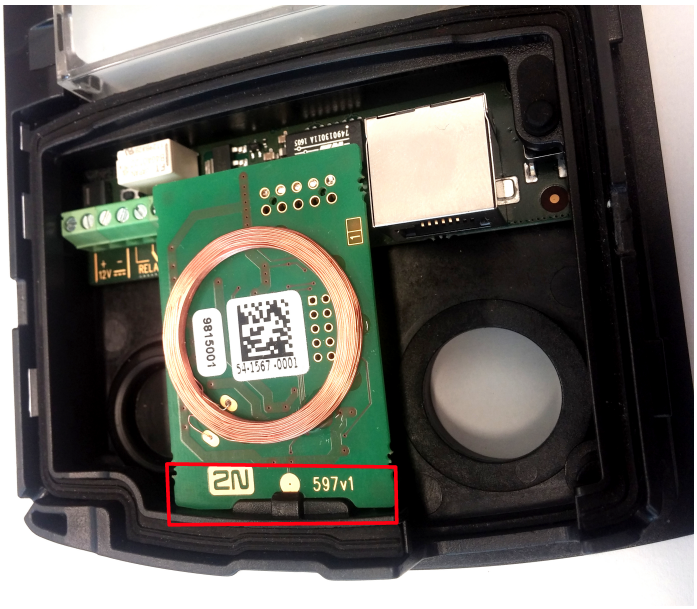


2) Insert the module of card reader into the shown connector.





3) As the last, it is necessary to fix the module using tabs built into the structure of 2N® IP Base . This tab is highlighted in the following picture by the red rectangle.



Module Power Supply

All modules 2N® IP Base are powered via connector X12.

RFID Card Reader Module 125 kHz

The 125 kHz RFID Card Reader (**Part No. 9156030)** is one of the 2N® IP Base intercom elements and is used for reading RFID card Ids in the 125 kHz band.

The following RFID cards can be read:

- EM4100, EM4102, HID Proximity

RFID Card Reader 13.56 MHz

The 13.56 MHz RFID Card Reader (**Part No. 9156031) is one of the 2N® IP Base** intercom elements and is used for reading RFID card Ids in the 13.56 MHz band.

The following RFID cards can be read (only card serial number is read):

- **ISO/IEC 14443A** Mifare Classic 1k & 4k, DESFire EV1, Mini, Plus S&X, Ultralight, Ultralight C
- **ISO/IEC 14443B** CEPAS, HID iCLASS – CSN only
- **JIS X 6319** Felica

Security Relay

The **2N® Security Relay** (Part No. 9159010) is used for enhancing security between the intercom and the connected electric lock. The **2N® Security Relay** is designed for any **2N IP intercom** model with firmware versions 1.15 and higher. It significantly enhances security of the connected electric lock as it prevents lock opening by forced intercom tampering.



Function:

The **2N® Security Relay** is a device installed between an intercom (outside the secured area) and the electric lock (inside the secured area). The **2N® Security Relay** includes a relay that can only be activated if the valid opening code is received from the intercom.

Specifications:

- Passive switch: NO and NC contacts, up to 30 V / 1 A AC/DC
- Active switch output: 12 V / 700 mA DC
- Dimensions: (56 x 31 x 24) mm
- Weight: 20 g

Installation:

Install the 2N® Security Relay onto a two-wire cable between the intercom and the electric lock inside the area to be secured (typically behind the door). The device is powered and controlled via this two-wire cable and so can be added to an existing installation. Thanks to its compact dimensions, the device can be installed into a standard mounting box.

Connection:

Connect the 2N® Security Relay to the intercom as follows:

- To the intercom active output (OUT1 or OUT2) , or
- To the intercom relay output with a 12 V DC serial external power supply.

Connect the electric lock to the 2N® Security Relay output as follows:

- To the active 12 V / 700 mA DC output, or
- To the relay output with a serial external power supply.

The device also supports a Departure button connected between the 'PB' and '-HeliosIP/IP Intercom' terminals. Press the Departure button to activate the output for 5 seconds.

Status signalling:

Green LED	Red LED	Status
blinking	off	Operational mode
on	off	Activated output
blinking	blinking	Programming mode – waiting for initialisation
on	blinking	Error – wrong code received

Configuration:

- Connect the **2N® Security Relay** to the properly set intercom switch output; refer to the C**onfiguration manual for 2N IP intercoms**. Make sure that one LED at least on the **2N® Security Relay** is on or blinking.

- Press and hold the **2N® Security Relay** Reset button for 5 seconds to put the device in the programming mode (both the red and green LEDs are blinking).
- Activate the intercom switch using the keypad, telephone, etc. The first code sent from the intercom will be stored in the memory and considered valid. After code initialisation, the **2N® Security Relay** will pass into the operational mode (the green LED is blinking).

Caution

- In case of resetting the factory default settings on a device with a version of firmware 2.18 or higher it is necessary to reprogram the **2N® Security Relay** using the instructions above.

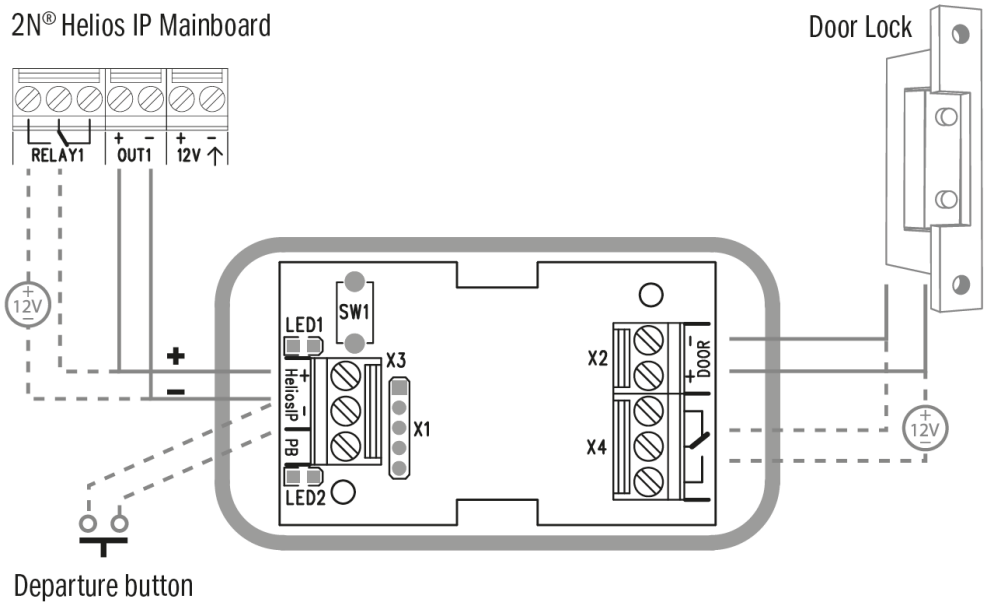
Tip

- FAQ: **2N® Security Relay – what it is and how to use it with 2N IP intercom?**

Tip

- Video Tutorial: **Door 2N IP intercoms – Security Relay**

Connection:


2N® Helios IP Mainboard
Door Lock
RELAY1
OUT1
12V
LED1
SW1
X3
X1
X2
X4
DOOR
HeliosIP
PB
LED2
12V
12V
Departure button

Installation Completion

Check the connection of all wires and the RJ-45 plug to the board connector.

Caution

- All unused connectors have to have tightened screws in order to avoid vibration caused by sound.

Nametag Placing

Every intercom package includes a piece of transparent foil, which can be laser printed. Download the printing template from www.2n.cz. Do not use paper or other non-water-proof materials for your tags. Water may get inside the name tag – this has no influence on the device function.

Caution

- The area where nametags are placed is called a wet zone. After heavy rain, water can penetrate to the nametag. Water in this area does not affect the intercom functionality in any way and evaporates soon.
- Always use waterproof foil (enclosed or other) for the nametags. Never use paper or ink jet printing to avoid damage due to water leakage!

Nametag Inserting/Replacing:

1. Remove the frame.
2. Remove the button cover using the clips placed on the shorter sides of the cover.
3. Remove the used nametag and insert a new one.
4. Replace the button cover.
5. Replace the frame.

3. Function and Use

This section describes the basic and extending functions of the the 2N® IP Base product.

Here is what you can find in this section:

- 3.1 Configuration
- 3.2 Intercom Control as Viewed by External User
- 3.4 Intercom Control as Viewed by Internal User
- 3.5 Maintenance
- 3.6 Downloads

3.1 Configuration

Configuration takes place typically via a Web interface. Alternatively, it is possible to configure using the software **2N® Access Commander** or service **My2N**. Configuration via the web interface can be accessed as follows:

- Launch your internet browser (Internet Explorer, Firefox, etc.).
- Enter the IP address of your intercom (**http://192.168.1.100/**, e.g.).
- Log in using the username **Admin** and password **2n**.

You have to know your intercom IP address to log in to the integrated web server. Upon purchase, **2N® IP Base** is set to the dynamic IP address mode – it retrieves the IP address automatically if there is a properly configured DHCP server in the LAN. If no DHCP is available, operate **2N® IP Base** in the static IP address mode (in default state adress http://192.168.1.100).

If you do not know the IP address of the device it is also possible to use the **2N® Network Scanner,** which can find the **2N IP intercom**, **2N® Access Unit** and **2N® IndoorTouch** in your network. You can find in section **3.6 Downloads**.

If your device remains inaccessible (you have forgotten the IP address, the network configuration has changed, etc.), you can change the network configuration using the device buttons.

Refer to the **Configuration manual for 2N IP intercoms** for the **2N® IP Base** configuration details.

IP Address Retrieval

Take the following steps to retrieve the **2N® IP Base** IP address:

- Connect (or, if connected, disconnect and reconnect) **2N® IP Base** to the power supply.
- Wait for the second sound signal  .
- Press the quick dial button on the main unit 5 times.
- **2N® IP Base** will read its IP address.

- If the address is 0.0.0.0, it means that the intercom has not obtained the IP address from the DHCP server



Note

- Be sure to press the button sequence within thirty seconds after the sound signal for security reasons. Up to 2 s intervals are allowed between the presses.

Dynamic/Static IP Address Switching

Take the following steps to switch the dynamic and static IP address mode in 2N® IP Base:

- Connect (or, if connected, disconnect and reconnect) 2N® IP Base to the power supply.
- Wait for the first sound signal .
- Press the quick dial button on the main unit 15 times.
- Switching is signalled with the sound signal .
- Wait until the device is restarted automatically.
- Upon restart, the static IP address mode will be switched to the dynamic IP address mode and vice versa.



The following network parameters will be set after the static IP address mode is switched on and the device is restarted:

- IP address: 192.168.1.100
- Network mask: 255.255.255.0
- Default gateway: 192.168.1.

Note

- Be sure to press the button sequence within thirty seconds after the sound signal for security reasons. Up to 2 s intervals are allowed between the presses.

3.2 Intercom Control as Viewed by External User

This subsection describes how to control 2N® IP Base when viewed by an external user.

Speed Dial Buttons

Press the speed dial buttons on the basic unit to make quick dialling for the first 1 or 2 (depending on the model type) in the telephone directory. Call setup is signalled by a long intermittent tone or otherwise as configured in the PBX connected.

Repeated pressing of one and the same speed dial button during call setup may initiate call termination, or call termination plus dialling the next telephone number of the called subscriber, or may be assigned no function.

3.4 Intercom Control as Viewed by Internal User

Call Answering

You can answer the incoming calls to the 2N® IP Base intercom using your phone like any other calls. You can unlock the door, activate/deactivate a user/profile via your phone keypad during the call. The calls, however, are time-limited to avoid unintentional blocking of the 2N® IP Base line. Set the maximum call duration in the Call time limit (refer to the Intercom Configuration / Services / Phone / Calls subsection of Configuration Manual). Press # on your phone anytime to extend the call time. The automatic call termination is signalled with a short beep 10 s before the call end.

Calling to 2N ® IP Base

2N® IP Base allows you to answer incoming calls. Set the required parameters in the Incoming calls group; refer to the Intercom Configuration / Services / Phone / Calls subsection of Configuration Manual.

Door Opening (Switch Activation) by Code

2N® IP Base is equipped with a door unlocking switch. Enter the valid code (refer to the Intercom Configuration / Hardware / Switches subsection of Configuration Manual) using your phone keypad to activate this switch.

Procedure:

- Enter the switch 1 or 2 activating code using your phone keypad and press  for confirmation. Confirmation is unnecessary if the Lock code without confirmation is enabled, refer to the Intercom Configuration / Hardware / Switches / Advanced subsection of Configuration Manual.
- A valid code is signalled by the  sound. An invalid code or interruption longer than as defined in Timeout for Entering Numbers is signalled by the  sound.

Cleaning

If used frequently, the device surface gets dirty. Use a piece of soft cloth moistened with clean water to clean the device.

We recommend to follow the principles below while cleaning:

Do not use aggressive detergents (such as abrasives or strong disinfectants). Use suitable cleaning agents for glass lens cleaning (cleaners for glasses, optical devices, screens, etc.). Do **not** use **alcohol-based** cleaners. Clean the device in dry weather in order to make waste water evaporate quickly. Cleaning wipes for IT equipment are suitable.

Warning

- Prevent water from getting inside the intercom.
- Do not use alcohol-based cleaners.

3.6 Downloads

Templates

Nameplates

Drilling Template

Software

2N® USB driver 1.2.4

2N® IP Eye 1.1.4

2N® Network Scanner 3.0.4

4. Technical Parameters

Signalling protocol

- SIP (UDP, TCP)

Buttons

- **Button design:** White-backlit transparent buttons with replaceable nametags
- **Button count:** 1 or 2

Audio

- **Microphone:** 1 integrated microphone
- **Amplifier:** 2 W (class D) amplifier
- **Speaker:** 2 W / 8 Ω
- **Sound pressure level (SPL max)**: 78 dB (for 1 kHz, distance 1 m)
- **Volume control:** Adjustable with automatic adaptive mode
- **Full duplex:** Yes (AEC)
- **Speech transmission index (STI):** 0.80

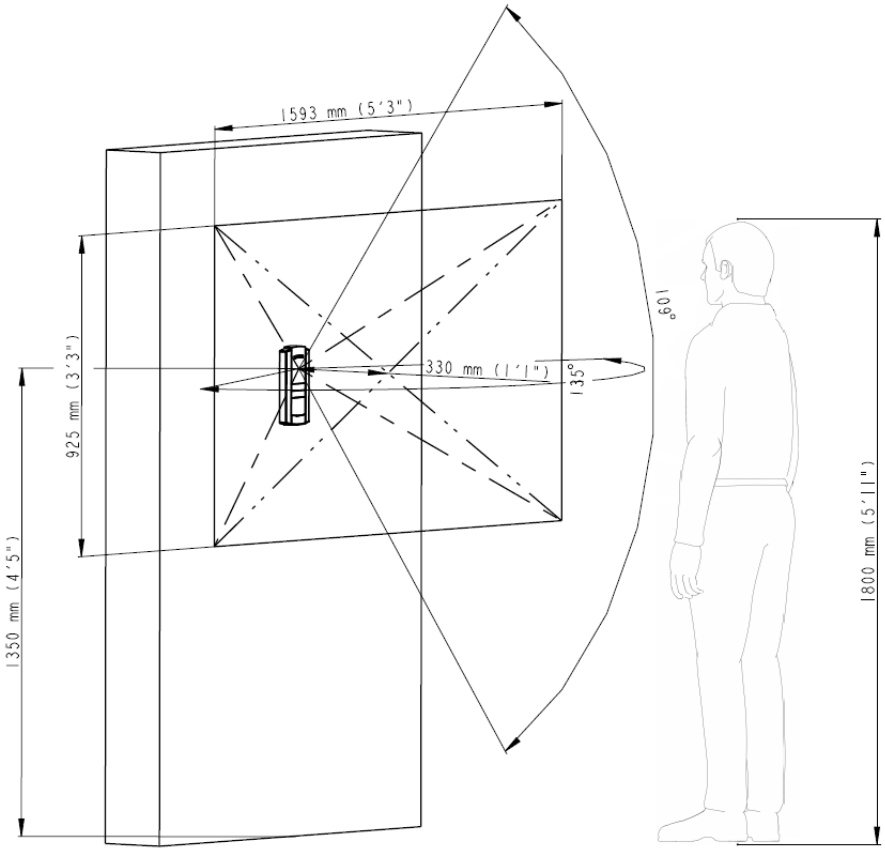
Audio stream

- **Protocols:** RTP
- **Codecs:** G.711, G.722

Camera

- **Sensor:** 1/3" colour CMOS
- **JPEG resolution:** Up to 1280 (H) x 960 (V)
- **Video resolution:** 640 (H) x 480 (V)
- **Frame rate:** Up to 30 snapshots/s
- **Sensor sensitivity:** 5.6 V/lux-sec (550 nm)
- **View angle:** 135 ° (H), 109 ° (V) , 141 °(D)
- **Infrared light:** No
- **Sensor sensitivity without IR light:** 0,1 Lux ± 20 %

- **Focal length:** 2.3 mm



Video stream

- **Protocols:** RTP
- **Codecs:** H.263, H.263+, H.264, M-JPEG
- **IP camera function:** Yes

Interface

- **Power supply:** 12 V ±15 % / 2 A DC or PoE
- **PoE:** PoE 802.3af (Class 0–12.95 W)
- **LAN:** 10/100BASE-TX with Auto-MDIX, RJ-45
- **Recommended cabling:** Cat-5e or higher
- **Supported protocols:** SIP2.0, RTP, HTTP, HTTPS, Syslog
- **Passive switch:** NO/NC contact, up to 30 V / 1 A AC/DC
- **Active switch output:** 8 up to 12 V DC depending on power supply (PoE: 10 V; adaptor: power supply voltage minus 2 V), max 600 mA

RFID card reader

- Optionally 125 kHz or 13.56 MHz
- Supported cards, 125 kHz, Part No. 9156030:
  - EM4100, EM4102, HID Prox
- Supported cards, 13.56 MHz, Part No. 9156031 (only card serial number is read)
  - ISO/IEC 14443A
    - Mifare Classic 1k & 4k, DESFire EV1, Mini, Plus S&X, Ultralight, Ultralight C
  - ISO/IEC 14443B
    - CEPAS, HID iCLASS
  - JIS X 6319
    - Felica

Mechanical properties

- **Cover:** Robust aluminium casting with surface finish
- **Working temperature:** −40 °C – 55 °C
- **Working relative humidity:** 10 % – 95 % (non-condensing)
- **Storing temperature:** −40 °C – 70 °C
- **Dimensions:** 229 (W) x 109 (H) x 31 (H)
- **Weight:** Max net weight: 1 kg
- **Covering level:**
  - IK 7
  - IP 65

5. Supplementary Information

Here is what you can find in this section:

- 5.1 Troubleshooting
- 5.2 Directives, Laws and Regulations
- 5.3 General Instructions and Cautions

5.1 Troubleshooting



For the most frequently asked questions refer to **faq.2n.cz**.

5.2 Directives, Laws and Regulations

Europe

2N® IP Base conforms to the following directives and regulations:

Directive 1999/5/EC of the European Parliament and of the Council, of 9 March 1999 - on radio equipment and telecommunications terminal equipment and the mutual recognition of their conformity

Directive 2006/95/EC of the European Parliament and of the Council of 12 December 2006 on the harmonisation of the laws of Member States relating to electrical equipment designed for use within certain voltage limits

Directive 2004/108/EC of the Council of 15 December 2004 on the harmonisation of the laws of Member States relating to electromagnetic compatibility

Commission Regulation (EC) No. 1275/2008, of 17 December 2008, implementing Directive 2005/32/EC of the European Parliament and of the Council with regard to ecodesign requirements for standby and off mode electric power consumption of electrical and electronic household and office equipment

Directive 2011/65/EU of the European Parliament and of the Council of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment

Regulation (EC) No. 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No. 793/93 and Commission Regulation (EC) No. 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC

Directive 2012/19/EC of the European Parliament and of the Council of 4 July 2012 on waste electrical and electronic equipment.

Industry Canada

This Class B digital apparatus complies with Canadian ICES-003. / Cet appareil numérique de la classe B est conforme a la norme NMB-003 du Canada.

FCC

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and receiver
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/TV technician for help.

Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

5.3 General Instructions and Cautions

Please read this User Manual carefully before using the product. Follow all instructions and recommendations included herein.

Any use of the product that is in contradiction with the instructions provided herein may result in malfunction, damage or destruction of the product.

The manufacturer shall not be liable and responsible for any damage incurred as a result of a use of the product other than that included herein, namely undue application and disobedience of the recommendations and warnings in contradiction herewith.

Any use or connection of the product other than those included herein shall be considered undue and the manufacturer shall not be liable for any consequences arisen as a result of such misconduct.

Moreover, the manufacturer shall not be liable for any damage or destruction of the product incurred as a result of misplacement, incompetent installation and/or undue operation and use of the product in contradiction herewith.

The manufacturer assumes no responsibility for any malfunction, damage or destruction of the product caused by incompetent replacement of parts or due to the use of reproduction parts or components.

The manufacturer shall not be liable and responsible for any loss or damage incurred as a result of a natural disaster or any other unfavourable natural condition.

The manufacturer shall not be held liable for any damage of the product arising during the shipping thereof.

The manufacturer shall not make any warrant with regard to data loss or damage.

The manufacturer shall not be liable and responsible for any direct or indirect damage incurred as a result of a use of the product in contradiction herewith or a failure of the product due to a use in contradiction herewith.

All applicable legal regulations concerning the product installation and use as well as provisions of technical standards on electric installations have to be obeyed. The manufacturer shall not be liable and responsible for damage or destruction of the product or damage incurred by the consumer in case the product is used and handled contrary to the said regulations and provisions.

The consumer shall, at its own expense, obtain software protection of the product. The manufacturer shall not be held liable and responsible for any damage incurred as a result of the use of deficient or substandard security software.

The consumer shall, without delay, change the access password for the product after installation. The manufacturer shall not be held liable or responsible for any damage incurred by the consumer in connection with the use of the original password.

The manufacturer also assumes no responsibility for additional costs incurred by the consumer as a result of making calls using a line with an increased tariff.

Electric Waste and Used Battery Pack Handling



Do not place used electric devices and battery packs into municipal waste containers. An undue disposal thereof might impair the environment!

Deliver your expired electric appliances and battery packs removed from them to dedicated dumpsites or containers or give them back to the dealer or manufacturer for environmental-friendly disposal. The dealer or manufacturer shall take the product back free of charge and without requiring another purchase. Make sure that the devices to be disposed of are complete.

Do not throw battery packs into fire. Battery packs may not be taken into parts or short-circuited either.



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